

REMARKS

The Examiner is thanked for his courtesy during our telephonic interview of 4 November 2004.

Claims 58, 63, 68, 73, 79, 85, 91, and 92 have been amended merely to clarify the invention. These amendments do not contain any new matter since they are supported in the specification on page 12, line 21 through page 13, line 1, among other places. Claims 1-57, 82, and 88 have been cancelled. Claims 58-92 remain pending.

The Examiner has provisionally rejected claims 58-92 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-55 of copending Application No. 09/606,418. However, it is respectfully submitted that amended claims 58, 63, 68, 73, 79, 85, 91, and 92 substantially differ from the claims of Application No. 09/606,418 since they recite adding a tag "wherein the tag is an option byte having one of two states that indicate whether redirection is permissible or impermissible." Claims 1-55 of Application No. 09/606,418 do not contain this limitation. Accordingly, it is respectfully submitted that the claims of the present application are patentable over Application No. 09/606,418.

The Examiner has rejected claims 58, 63, 68 and 91 under 35 U.S.C. §103(a) as being unpatentable over Brendal (U.S. Patent No. 6,182,139) in view Mogul (U.S. 6,097,882) and further in view of Malkin (U.S. Patent No. 6,247,054). Claims 73, 79, 85 and 92 are rejected under 35 U.S.C. §103(a) as being unpatentable over Brendel and in further view of Mogul. Claim 58-72, 74-75, 78, 80-81, 84, 86-87, 90 and 91 are rejected under 35 U.S.C. §103(a) as being unpatentable over Brendel in view of He et al. (U.S. 6,671,259) and further in view of Malkin. Claims 73, 76-77, 79, 82-83, 85, 88-89 and 92 are rejected under 35 U.S.C. §103(a) as being unpatentable over Brendel in view of He et al. The Examiner's rejections are overcome as follows.

Independent claim 58 is directed towards a "method of facilitating redirection of traffic between a server and a client to between the client and a selected one from a plurality of replicas." Claim 58 also requires "receiving a packet from a client, the packet having a destination identifier associated with a server" and "when the packet is a start packet, at the client side, adding a tag to the start packet to indicate that the start packet should be forwarded by a device other than a client side device to a plurality of replicas that each duplicates the data content of the server, wherein the tag is an option byte having one of two states that indicate whether redirection is permissible or impermissible." Claim 58 also requires "when a first

acknowledgement packet associated with the start packet is received first with respect to any other acknowledgement packets, storing and associating a source identifier of the first acknowledgement packet with the stored destination identifier of the start packet.” Claim 58 also requires “after storing and associating the source identifier of the first acknowledgement packet, sending the first acknowledgement packet to the client” and “prior to storing and associating the source identifier of the first acknowledgement packet, cracking the first acknowledgement packet to obtain the source identifier when the first acknowledgement packet has been encapsulated.” Claim 58 also requires “when cracked, encapsulating the cracked acknowledgement packet with a source address associated with the packet, wherein the encapsulated first acknowledgement packet is sent to the client.” Finally, claim 58 requires “when a second acknowledgement packet associated with the start packet is received after the first acknowledgement packet, inhibiting sending of the second acknowledgement to the client.” Claim 63 is directed towards a computer system configured to perform similar operations, and claim 68 is directed towards a computer program product containing program instructions for performing similar operations. Claim 91 is directed towards an apparatus which includes means for performing similar operations.

Claim 73 is directed towards a “method of facilitating redirection of traffic between a server and a client to between the client and a nearest replica selected from a plurality of replicas.” Claim 73 also requires “at the client side, receiving a packet that is traveling between a client and a server or between the client and a replica” and “when the received packet is a start packet that is traveling from the client to the server, at the client side, adding a tag to the start packet to indicate that the start packet should be forwarded by a device other than a client side device to a plurality of replicas that each duplicates the data content of the server, wherein the tag is an option byte having one of two states that indicate whether redirection is permissible or impermissible.” Claim 73 also recites “when the received packet is an acknowledgement packet that is received first and spoofs the server, obtaining a source identifier of the replica from the acknowledgement when the acknowledgement originates from the replica and then sending the acknowledgement packet to the client.” Claim 73 also requires “when the received packet is an acknowledgement packet that is not received first and spoofs the server, inhibiting sending of the second acknowledgement to the client.” Finally, claim 73 also requires “when the received packet is a subsequent packet received after the start packet and the acknowledgement packet, altering the subsequent packet so that it goes to the replica when the subsequent packet originates from the client, wherein the alteration is based on the obtained source identifier from the acknowledgement packet.” Claim 79 is directed towards a computer system configured to perform similar operations, and claim 85 is directed towards a computer program product containing program instructions for performing similar operations. Claim 92 is directed towards an apparatus which includes means for performing similar operations.

In other words, at the client side, a start packet is tagged to indicate that the start packet is to be forwarded by a device other than a client side device to a plurality of replicas that each duplicates the data of the requested server. That is, the data request is tagged so that it is forwarded to a number of replicas containing the requested object. This tag is in the form of an option byte having one of two states that indicate whether redirection is permissible or impermissible. This tagging allows acknowledgements which are received after the first acknowledgement packet (e.g., because the replica's that are forwarding the later acknowledgements are a greater distance from the tagging device) to be inhibited from reaching their destination. Consequently, only the data from the fastest responding (and probably closest) replica forwarded to the client, which allows the most efficient replica to be utilized.

The primary reference Brendal fails to teach or suggest adding a tag to a start packet to indicate that the start packet is to be forwarded by a device other than a client side device to a plurality of replicas that each duplicates the data of the requested server as admitted by the Examiner in the Office Action of 13 July 2004, at page 5, lines 15-16. Thus, Brendal necessarily also fails to teach adding a tag that is in the form of an option byte having one of two states that indicate whether redirection is permissible or impermissible, in the manner claimed.

The secondary references also fail to teach or suggest such limitations. For instance, the secondary reference Mogul merely teaches that a transparent replicator device forwards a request to a single replica selected from a set of replicas. Column 3, Lines 17-28. Specifically, Mogul discloses “[w]hen the transparent replicator 10 sees a request from address Z, from client 12 for example, it decides which of the server replicas 20 and 22 should receive the request according to a set of policies described below.” These policies could be preconfigured at the replicator 10 and performed automatically by the replicator 10 without the start packet being tagged to indicate such operations. That is, Mogul is completely silent as to whether the replica forwarding operation is indicated in a tag that is added to the request packet. Thus, it is respectfully submitted that Mogul fails to teach or suggest adding a tag to a start packet to indicate that the start packet is to be forwarded by a device other than a client side device to a plurality of replicas that each duplicates the data of the requested server and that such a tag is in the form of an option byte having one of two states that indicate whether redirection is permissible or impermissible.

The secondary reference He et al. discloses a system for load balancing among a plurality of servers. Although a load balance (LB) server performs load balancing and then sends a request to a single selected server, He et al. fails to teach or suggest adding a tag to such request so as to indicate that the request is to be sent to *a plurality of replicas which each duplicate the*

data of the requested server, in the manner claimed. He et al. is completely silent as to how it is determined that a request is to be load balanced. Arguably, each server may be predefined as a load-balancing candidate and requests which are being initially sent to a defined load-balancing server are only sent to other "load-balancing" servers without alteration of the request. Accordingly, He et al. fails to teach or suggest adding a tag to a start packet to indicate that the start packet is to be forwarded by a device other than a client side device to a plurality of replicas that each duplicates the data of the requested server. Thus, He et al. necessarily also fails to teach adding a tag that is in the form of an option byte having one of two states that indicate whether redirection is permissible or impermissible, in the manner claimed.

Accordingly, it is respectfully submitted that claims 58, 63, 68, 79, 85, 91 and 92 are patentable over the cited references.

The Examiner's rejections of the dependent claims are also respectfully traversed. However, to expedite prosecution, all of these claims will not be argued separately. Claims 59-62, 64-67, 69-78, 80-84, and 86-90 each depend directly from independent claims 58, 63, 68, 79, or 85 and, therefore, are respectfully submitted to be patentable over cited art for at least the reasons set forth above with respect to claims 58, 63, 68, 79, and 85. Further, the dependent claims require additional elements that when considered in context of the claimed inventions further patentably distinguish the invention from the cited art.

Applicant believes that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
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